
ENVIRONMENTAL COMPLIANCE SUMMARY

CALENDAR YEAR 1999

Compliance Program

The West Valley Demonstration Project (WVDP) is currently focusing on several goals that will lead to eventual site closure. Processing of the high-level liquid waste into durable, solid glass is almost complete, and the WVDP is now working on removing and vitrifying the high-level radioactive residuals (heels) remaining in the high-level waste tanks. In addition, the WVDP is shipping low-level waste, developing a remote-handled waste facility, actively managing on-site groundwater contamination, preparing for the shipment of spent nuclear fuel, and cleaning up facilities not presently used in anticipation of eventual closure. Activities in progress at the WVDP are regulated by various federal and state laws that protect the public, workers, and the environment.

The U.S. Department of Energy (DOE), the federal agency that oversees the WVDP, established its policy concerning environmental protection in DOE Order 5400.1, General Environmental Protection Program. This Order lists the regulations, laws, and required reports that are applicable to DOE-operated facilities. DOE Orders 5400.1 and 231.1, Environment, Safety, and Health Reporting, require the preparation of this annual Site Environmental Report, which is in-

tended to summarize environmental data gathered during the calendar year, describe significant programs, and document WVDP compliance with environmental regulations.

The major federal environmental laws and regulations that apply to the West Valley Demonstration Project are the Resource Conservation and Recovery Act, the Clean Air Act, the Emergency Planning and Community Right-to-Know Act, the Clean Water Act, the Safe Drinking Water Act, the Toxic Substances Control Act, and the National Environmental Policy Act. These laws are administered primarily by the U.S. Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC) through state programs and regulatory requirements such as permitting, reporting, inspecting, and self-auditing.

In addition, because the emission of radiological and nonradiological materials from an active facility cannot be completely prevented, the EPA, NYSDEC, and the DOE have established standards for such emissions that are intended to protect human health and the environment. The WVDP applies to NYSDEC and the EPA for permits that allow the site to release limited amounts of radiological and non-

radiological constituents through controlled and monitored discharges into water and air in concentrations that have been determined to be safe for humans and the environment. In general, the permits describe the discharge points, specify management and reporting requirements, list the limits on those pollutants likely to be present, and define the sampling and analysis schedule.

Environmental inspections and audits are conducted routinely by the EPA, NYSDEC, the New York State Department of Health (NYSDOH), and the Cattaraugus County Health Department. On-site and off-site radiological monitoring in 1999 confirmed that site activities were conducted well within state and federal regulatory limits. On-site nonradiological effluent monitoring confirmed that site effluents remained within permitted limits.

Management at the WVDP continued to provide strong support for environmental compliance issues in 1999. Through an integrated environmental, safety, and health management system, DOE Orders and applicable state and federal environmental statutes and regulations are integrated into work activities, demonstrating a commitment to protecting WVDP employees, the public, and the environment while working toward the WVDP goals.

Summary of Permits

A summary of permits may be found in Appendix K, Table K-3 (pp.K-5 and K-6).

Compliance Status

The following environmental compliance summary describes the federal and state laws and regulations that are applicable to the WVDP and the relevant environmental compliance activities that occurred at the WVDP during 1999.

Resource Conservation and Recovery Act (RCRA). The Resource Conservation and Recovery Act was enacted to ensure that hazardous wastes are managed in a manner that protects human health and the environment. RCRA and its implementing regulations govern hazardous waste generation, treatment, storage, and disposal.

RCRA regulations mandate that generators take responsibility for ensuring the proper treatment, storage, and disposal of their wastes. The EPA is the federal agency responsible for issuing guidelines and regulations for the proper management of solid and hazardous waste (including mixed waste).

In New York, the EPA has delegated the authority to enforce these regulations, including the radioactive and hazardous mixed waste program, to NYSDEC. In addition, the U.S. Department of Transportation (DOT) is responsible for issuing guidelines and regulations for the labeling, packaging, and spill-reporting provisions for hazardous and mixed wastes while in transit.

A facility that treats or stores large quantities of hazardous waste for more than 90 days or disposes of hazardous waste at that facility must apply for a permit from the EPA (or authorized state). The permit defines the treatment processes to be used, the design capacities, the location of hazardous waste storage units, the design and operating criteria for disposal units, and the hazardous wastes to be handled.

In 1984 the DOE notified the EPA of hazardous waste activities at the WVDP and identified the WVDP as a generator of hazardous waste. In June 1990 the WVDP filed a RCRA Part A Hazardous Waste Permit Application with NYSDEC for storage and treatment of hazardous wastes and has been operating under interim status since then.

The WVDP continues to update the RCRA Part A Permit Application as changes to the site's interim-status waste-management operations occur. The last update occurred in October 1995. No updates to the Part A Permit Application were necessary in 1999. Proposed updates for calendar year 2000 are now being pursued for new waste management facilities such as the remote-handled waste facility.

Hazardous Waste Management Program.

Hazardous wastes at the WVDP are managed in accordance with 6 NYCRR (New York Official Compilation of Codes, Rules, and Regulations) Parts 371-376. In order to dispose of hazardous wastes generated from on-site activities, the WVDP uses New York State-permitted transporters (pursuant to 6 NYCRR Part 364) to ship RCRA-regulated wastes to permitted or authorized treatment, storage, or disposal facilities (pursuant to 6 NYCRR Part 373-1). Using these services, the WVDP shipped approximately 6.9 metric tons (7.6 tons) of non-radioactive hazardous waste off-site in 1999, less than the amount generated and shipped in 1998. Approximately 876 kilograms (1,930 lbs) of the total were shipped out for recycling.

Off-site hazardous waste shipments and their receipt at designated treatment, storage, or disposal facilities (TSDFs) are documented by signed manifests that accompany the shipment. If the signed manifest is not returned to the WVDP within the regulatory limit of forty-five days from shipment, an exception report must be filed and receipt of the waste confirmed with the TSDF. No exception reports for WVDP waste shipments were required to be filed in 1999.

Hazardous waste activities must be reported to NYSDEC every year through the submittal of the facility's annual Hazardous Waste Report. This report summarizes the hazardous waste activities for the previous year, specifies the quantities of waste generated, treated, and/or

disposed, and identifies the TSDFs used. The calendar year 1999 annual Hazardous Waste Report was submitted to NYSDEC by March 1, 2000. In addition, a hazardous waste reduction plan must be filed every two years and updated annually. These plans document efforts to minimize the generation of hazardous waste and were first submitted to NYSDEC in 1990. The most recent Annual Status Report for the Hazardous Waste Reduction Program was updated in June 1999. The next update is due in July 2000.

An annual inspection to assess compliance with hazardous waste regulations was conducted by NYSDEC on March 29, 1999. No deficiencies were noted during the inspection.

Nonhazardous, Regulated Waste Management Program.

The WVDP shipped approximately 48 metric tons (53 tons) of nonradioactive, non-hazardous material off-site to solid waste management facilities in 1999. Of this amount, 8.9 metric tons (9.8 tons) were recycled or reclaimed. Some of the recycled materials were lead-acid batteries, nonhazardous oils such as motor oil, hydraulic oil, and compressor oil, and antifreeze, which were recycled at off-site authorized reclamation and recycling facilities. The WVDP also shipped approximately 716 metric tons (789 tons) of digested sludge and untreated wastewater from the site sanitary and industrial wastewater treatment facility to the Buffalo Sewer Authority for treatment.

Radioactive Mixed Waste Management Program.

Radioactive mixed waste (RMW) contains both a radioactive component, regulated under the Atomic Energy Act, and a hazardous component, regulated under RCRA. Both the EPA and NYSDEC oversee radioactive mixed waste management at the WVDP. In March 1993 the DOE entered into a Federal and State Facility Compliance Agreement (FSFCA) with the EPA, NYSDEC, the New York State En-

ergy Research and Development Authority (NYSERDA), and West Valley Nuclear Services Company (WVNS), the primary contractor for the DOE at the WVDP. The FSFCA addressed requirements for managing the hazardous component of the radioactive mixed waste, storage requirements for radioactive mixed waste, and characterization of historical wastes in storage at the WVDP.

In August 1997 a one-year extension of the FSFCA was requested to provide the additional time needed to characterize radioactive mixed waste stored in the chemical process cell waste storage area. In November 1997 NYSDEC granted a one-year extension exclusively for section 7.2, Waste Analysis, to complete the final characterization of containers. Characterization of historical wastes was completed and the FSFCA agreement terminated on March 22, 1999.

The Federal Facility Compliance Act (FFC Act) of 1992, an amendment to RCRA, was signed into law on October 6, 1992. The FFC Act requires DOE facilities to develop treatment plans for radioactive mixed waste inventories and to enter into agreements with the regulatory agencies that require the treatment of the inventories according to the approved plans.

DOE facilities were required to develop site treatment plans in three steps: conceptual, draft, and proposed. The WVDP's conceptual plan was submitted to NYSDEC in October 1993, the draft plan in August 1994, and the proposed site treatment plan in March 1995.

The proposed plan comprises two volumes: The Background Volume provides information on each radioactive mixed waste stream and information on the preferred treatment method for the waste. The Plan Volume contains proposed schedules for treating the radioactive mixed

waste to meet the land disposal restriction (LDR) requirements of RCRA. Each submittal to NYSDEC underwent a public comment period during which input was solicited from WVDP stakeholders.

The DOE and NYSDEC entered into a consent order on September 3, 1996, that requires the completion of the milestones identified in the Plan Volume. The WVDP began implementing the site treatment plan immediately and updates it every year to bring waste stream, inventory, and treatment information current to the end of the fiscal year. An update of fiscal year 1999 activities was completed and submitted to NYSDEC in February 2000. All Plan Volume milestones for calendar year 1999 were met.

Shipments of radioactive mixed waste to off-site facilities for treatment and their receipt at the designated TSDF are documented via manifests. In 1999 the WVDP shipped approximately 166 kilograms (365 lbs) of radioactive mixed waste to an off-site facility.

RCRA §3008(h) Administrative Order on Consent. The DOE and NYSEDA entered into a RCRA §3008(h) Administrative Order on Consent with NYSDEC and the EPA in March 1992. The Consent Order required NYSEDA and the DOE's West Valley Demonstration Project Office (OH/WVDP) to conduct RCRA-facility investigations (RFIs) at solid waste management units (SWMUs) in order to determine if there has been a release or if there is a potential for release of RCRA-regulated hazardous constituents from SWMUs.

The final RFI reports were submitted in 1997, completing the investigative activities associated with the Consent Order. As a result of the RFIs, no immediate action, other than continued groundwater monitoring at several units, was required. The WVDP continued in 1999

to monitor and evaluate SWMUs and to comply with other requirements of the RCRA §3008(h) Administrative Order on Consent.

Waste Minimization and Pollution Prevention.

The WVDP continued a long-term program to minimize the generation of low-level radioactive waste, radioactive mixed waste, hazardous waste, industrial waste, and sanitary waste and to promote affirmative procurement as directed by Executive Order 12856 (Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements), Executive Order 12873 (Federal Acquisition, Recycling, and Waste Prevention), and Executive Order 13101 (Greening the Government through Waste Prevention, Recycling, and Federal Acquisition), which promotes the Affirmative Procurement Program (APP).

The APP specifies responsibilities and direction for federal agencies in acquiring recycled and environmentally preferable products and services designated by the EPA in 40 CFR Part 247. WVNS reports its challenges and successes associated with the purchase and use of these materials and services to the DOE each year.

Waste streams on-site are separated into either waste from sources directly associated with the vitrification process or into other non-vitrification sources. The WVDP set the following cumulative waste-reduction goals for 1999: a 50% reduction in the generation of low-level radioactive waste, radioactive mixed waste, and hazardous waste; a 30% reduction in nonvitrification industrial waste; and a 50% reduction in sanitary waste.

The waste-reduction goals for wastes associated with vitrification operations were a 28% reduction in vitrification hazardous wastes and an 18% reduction in vitrification industrial waste, compared to an annualized 1996 total of waste generated.

These goals were met or exceeded during calendar year 1999. Low-level radioactive waste generation was reduced by 77%, radioactive mixed waste generation by 63%, and vitrification hazardous waste generation by 94%. Non-vitrification waste generation was reduced by 75% and sanitary waste generation by 54%. (See Chapter 1, p.1-16, for more detailed information concerning waste minimization.)

Underground Storage Tanks Program. RCRA regulations also cover the use and management of underground storage tanks and establish minimum design requirements in order to protect groundwater resources from releases. The regulations, specified in 40 CFR Part 280, require underground storage tanks to be equipped with overfill protection, spill prevention, corrosion protection, and leak detection systems. New tanks must comply with regulations at the time of installation.

New York State also regulates underground storage tanks through two programs, petroleum bulk storage (Title 6 NYCRR, Parts 612 - 614) and chemical bulk storage (6 NYCRR, Parts 595 - 599). The state registration and minimum design requirements are similar to those of the federal program except that petroleum tank fill ports must be color-coded using American Petroleum Institute standards to indicate the product being stored.

A 550-gallon double-walled steel underground storage tank, upgraded in 1998 to bring it into compliance with the most recent EPA requirements (40 CFR Part 280.21), is used to store standby diesel fuel for the supernatant treatment system ventilation blower system. This tank is equipped with aboveground piping, an upgraded interstitial leak detection system, and a high-level warning device. This is the only underground petroleum-storage tank currently in use at the WVDP.

A former underground petroleum-storage tank, closed in place before the New York State underground storage tank program closure requirements were implemented in 1985, was removed in 1997. Testing of soils from the tank excavation had shown evidence of earlier petroleum leakage, and on March 19, 1999 the DOE and NYSDEC executed a Stipulation Agreement Pursuant to Section 17-0303 of the Environmental Conservation Law and Section 176 of the Navigation Law for cleanup and removal of the petroleum contamination. A bioventing system, installed in August 1999 to remediate the petroleum-contaminated soils, stimulates natural in situ biodegradation of petroleum hydrocarbons in the soil by providing an abundant oxygen supply to existing soil microorganisms. The oxygen is provided by injecting air directly into the contaminated soil zone.

This system is scheduled to operate for two years. At the end of each year an assessment of the system's performance will be completed.

The WVDP does not use underground bulk chemical storage tanks.

New York State-regulated Aboveground Storage Tanks. The state of New York regulates aboveground petroleum bulk storage under 6 NYCRR Parts 612, 613, and 614, and aboveground hazardous bulk chemical storage under 6 NYCRR Part 595 et seq. These regulations require secondary containment, external gauges to measure the current reserves, monthly visual inspections of petroleum tanks, and documented daily, annual, and five-year inspections of chemical tanks. Documentation relating to these periodic inspections is maintained by the WVDP and is available for regulatory agencies to review. Petroleum tank fill ports also must be color-coded and chemical tanks must be labeled to indicate the product stored.

WVDP registration at the end of 1999 included nine aboveground petroleum tanks and eleven aboveground chemical storage tanks. Three of the petroleum tanks contain No. 2 fuel oil, one contains unleaded gasoline, and the remainder contain diesel fuel. The Quality Assurance department inspects the aboveground petroleum tanks every month.

Nine of the chemical storage tanks are used as needed to contain nitric acid or nitric acid mixtures. Sodium hydroxide and anhydrous ammonia are stored in the remaining two tanks. All of the tanks are equipped with gauges and secondary containment systems except the anhydrous ammonia tank, which does not require secondary containment. (Any release of the contents of the anhydrous ammonia tank would be in gaseous form; thus, secondary containment is unnecessary.)

In June and July of 1999 NYSDEC inspected the WVDP's chemical bulk storage tanks to assess compliance with the rules and regulations of the chemical bulk storage program. NYSDEC reported that the WVDP was in compliance with current regulations as well as with upgrading requirements that were to go into effect in December 1999.

Medical Waste Tracking. Medical waste poses a potential for humans to be exposed to infectious diseases and pathogens from contact with human bodily fluids. Medical evaluations, inoculations, and laboratory work at the on-site nurse's office regularly generate potentially infectious medical wastes that must be tracked in accordance with NYSDEC requirements (6 NYCRR Part 364.9). The WVDP has retained the services of a permitted waste hauler and disposal firm to manage these medical wastes. Medical wastes are sterilized with an autoclave by the disposal firm to remove the associated

hazard and then disposed. Twenty-two kilograms (48 lbs) of medical waste consisting of dressings and protective clothing such as rubber gloves, and needles, syringes, and other sharps were generated and disposed in 1999.

Clean Air Act (CAA). The Clean Air Act, as amended in 1990, including Titles I through VI, establishes a framework for the EPA to regulate air emissions from both stationary and mobile sources. These amendments mandate that each state establish a program to permit the operation of sources of air pollution. In 1996 NYSDEC amended 6 NYCRR Parts 200, 201, 231, and 621 to implement the requirements of the new EPA Clean Air Act Title V permitting processes.

In New York State, either the EPA or NYSDEC issues permits for stationary sources that emit regulated pollutants, including hazardous air pollutants. Sources requiring permits are those that emit regulated pollutants from a particular source such as a stack, duct, vent, or other similar opening if the pollutants are in quantities above a predetermined threshold. WVDP radiological emissions are regulated by the EPA, and all other air pollutants are regulated by NYSDEC.

Air emissions of radionuclides from point sources at the WVDP are regulated by the EPA under the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations, 40 CFR Part 61, Subpart H, National Emission Standards for Emission of Radionuclides Other Than Radon From Department of Energy Facilities. The WVDP currently has permits for six radionuclide sources, including the slurry-fed ceramic melter and the vitrification heating, ventilation, and air conditioning (HVAC) system. Other less significant sources of radionuclide emissions, such as those from

the on-site laundry, do not require permits. Non-point radiological sources of emissions such as lagoons also do not require permits. Emissions from all these sources are quantified for reporting to the EPA. The WVDP reports the radionuclide emissions from its non-permitted and permitted sources to the EPA annually in accordance with NESHAP regulations. Calculations to demonstrate compliance with NESHAP radioactive dose limits showed 1999 doses to be less than 0.2% of the 10 millirem standard.

Nonradiological point sources of air emissions are regulated by NYSDEC. Major-source facilities are required by 6 NYCRR Part 201 to file a Title V permit application, unless operating limits are established, to ensure that the facility does not emit pollutants above the threshold limits. WVDP emissions of nitrogen oxides (NO_x) and sulfur dioxide (SO₂) are each capped at 100 tons per year. Thus, the WVDP is not required to file a Title V permit.

The WVDP opted to file a State Facility Permit Application for the site. A State Facility Permit Application containing data on two new boilers was filed in October 1997 and approved in January 1998. A State Facility Permit modification to include all remaining WVDP air emission sources was submitted in December 1997, and the WVDP is awaiting approval of this permit. Existing certificate-to-operate permits (COs) are in effect until the State Facility Permit modification is approved by NYSDEC. The WVDP has a total of five COs for nonradiological point sources.

In July 1999 NYSDEC granted the WVDP a waiver of quarterly submissions of NO_x and SO₂ emission totals. The WVDP is required to submit only an annual certification, in September, that contains NO_x and SO₂ emission to-

tals. The 1999 certification reported 7 tons of NO_x and 0.13 tons of SO₂, which were well below the 100-ton cap for each category. The WVDP also conducts cylinder gas audits every quarter but is no longer required to conduct relative accuracy test audits of the melter off-gas NO_x analyzers to establish compliance with the Capping Plan approved by NYSDEC on July 28, 1995.

EPCRA 302-303:			
Planning Notification	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Req.
EPCRA 304:			
EHS Release Notification	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not Req.
EPCRA 311-312:			
MSDS/Chemical Inventory	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Req.
EPCRA 313:			
TRI Reporting	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Req.

There were no air permit or regulatory exceedances in 1999. The air permits that were in effect at the WVDP in 1999 are listed in Appendix K, Table K-3 (pp. K-5 and K-6).

Emergency Planning and Community Right-to-Know Act (EPCRA). The Emergency Planning and Community Right-to-Know Act (EPCRA) was enacted as Title III of the Superfund Amendments and Reauthorization Act (SARA). EPCRA was designed to create a working partnership between industry, business, state and local governments, public health and emergency response representatives, and interested citizens. EPCRA is intended to address concerns about the effects of chemicals used, stored, and released in local communities.

Executive Order 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements, requires all federal agencies to comply with the following EPCRA provisions: planning notification (Sections 302 — 303), extremely hazardous substance (EHS) release notification (Section 304), material safety data sheet (MSDS)/chemical inventory (Sections 311 — 312), and toxic release inventory (TRI) reporting (Section 313). The WVDP continued to comply with these provisions in 1999, as indicated on the table above.

- WVDP representatives participated in semi-annual meetings of the Cattaraugus County Local Emergency Planning Committee (EPCRA Section 302-303). WVDP representatives also attended numerous meetings held by the Cattaraugus and Erie County Emergency Management Services concerning WVDP and other local emergency planning activities. Area hospitals and the West Valley Volunteer Hose Company continued to participate in on-site training drills and in information exchanges concerning hazardous-substance management at the WVDP.

- Compliance with all EPCRA reporting requirements was maintained and all required reports were submitted within the required time frame. There were no releases of extremely hazardous substances (EHS) at the WVDP that triggered the release notification requirements of Section 304 of EPCRA.

- Under EPCRA Section 311 requirements, the WVDP reviews information about reportable chemicals every quarter. If a hazardous chemical, which was not previously reported, is present on-site in an amount exceeding the threshold planning quantity, an MSDS and an updated hazardous chemical list are submitted to the state and local emergency response

groups. This supplemental reporting ensures that the public and the emergency responders have current information about hazardous chemicals at the WVDP. No new chemicals were added to the hazardous chemicals list in 1999, and no additional EPCRA Section 311 notifications were required.

- Under EPCRA Section 312 regulations, the WVDP submits annual reports to state and local emergency response organizations and fire departments that specify the quantity, location, and hazards associated with chemicals stored on-site. The number of reportable chemicals did not change between 1998 and 1999: sixteen reportable chemicals above threshold planning quantities were stored at the WVDP in 1999.
- Under EPCRA Section 313 requirements, the WVDP filed a toxic release inventory (TRI) report with the EPA in 1999 for nitric acid and for anhydrous ammonia for the preceding year, calendar year 1998.

Clean Water Act (CWA). Section 402 of the Clean Water Act of 1972 generally regulates disposal of liquids and, as amended, authorizes the EPA to regulate discharges of pollutants to surface water through a National Pollutant Discharge Elimination System (NPDES) permit program. The EPA has delegated this authority to the state of New York, which issues State Pollutant Discharge Elimination System (SPDES) permits for discharges to surface water.

Section 404 of the CWA regulates the development of areas in and adjacent to the waters of the United States. Supreme Court interpretations of Section 404 have resulted in the inclusion of wetlands in the regulatory definition of waters of the United States. Section 404 regulates the disposal of solids, in the form of dredged or fill material, into these areas by

granting the U.S. Army Corps of Engineers the authority to designate disposal areas and issue permits for these activities. Executive Order 11990, Protection of Wetlands, directs federal agencies to “avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practical alternate.” (Article 24 of the New York State Environmental Conservation Law also contains requirements for the protection of freshwater wetlands.)

In addition, Section 401 of the CWA requires applicants for a federal license or permit pursuant to Section 404 to obtain certification from the state that the proposed discharge complies with effluent and water quality-related limitations, guidelines, and national standards of performance identified under sections 301, 302, 303, 306, 307, and 511(c) of the CWA. The EPA has delegated administration of this program to New York State.

SPDES-permitted Outfalls. Point-source liquid effluent discharges to surface waters of New York State are permitted through the New York SPDES program. The WVDP has four SPDES-permitted compliance points for discharges to Erdman Brook and Frank’s Creek.

- Outfall 001 (WNSP001) discharges treated wastewater from the low-level waste treatment facility (LLWTF) and the north plateau groundwater recovery system. (See North Plateau Groundwater Recovery System [p.ECS-11] and Chapter 3, Groundwater Monitoring, Special Groundwater Monitoring [p. 3-15].) The treated wastewater is held in lagoon 3, sampled and analyzed, and periodically released after notifying NYSDEC. In 1999 the treated wastewater from the low-level waste treatment facility (LLWTF) was discharged at WNSP001 in four

batches totaling 29.1 million liters (7.67 million gal) for the year. The annual average concentration of radioactivity at the point of release was approximately 32% of the DOE derived concentration guides (DCGs). None of the individual releases exceeded the DCGs. (See *derived concentration guide* in the Glossary and Chapter 1 [p.1-5].)

- Outfall 007 (WNSP007) discharges the effluent from the site sanitary and industrial wastewater treatment facility, which treats sewage and various nonradioactive wastewaters from physical plant systems (e.g., water plant production residuals and boiler blowdown). The average daily flow at WNSP007 in 1999 was 43,100 liters (11,400 gal).

- Outfall 008 (WNSP008) discharges groundwater and surface water runoff directed from the northeast side of the site's LLWTF lagoon system through a french drain. The average daily flow at WNSP008 in 1999 was 6,910 liters (1,830 gal).

- Monitoring point 116, located in Frank's Creek, represents the confluence of discharge from outfalls 001, 007, and 008; base stream flow; wet weather flows (e.g., surface water runoff); groundwater seepage; and augmentation water (untreated water from the site reservoirs). This is not a physical outfall but a location chosen for monitoring in order to demonstrate compliance with SPDES permit limits during discharge of lagoon 3. Before discharge of lagoon 3, sample data for total dissolved solids (TDS) and flow measurements from upstream sources are used to calculate the amount of augmentation water and flow needed to maintain compliance with SPDES-permitted TDS limits.

There were no SPDES permit limit exceptions during calendar year 1999.

In March 1999 NYSDEC conducted its annual facility inspection. At the request of the inspector, the SPDES outfalls, the sanitary and industrial wastewater treatment facility, and the LLWTF were observed. No violations were noted during the inspection.

In March 1996 a permit application had been submitted to NYSDEC to increase the average flow of effluent from the north plateau groundwater recovery system from approximately 9.8 million liters (2.6 million gal) a year to approximately 39.7 million liters (10.5 million gal) a year. (See North Plateau Groundwater Recovery System [p.ECS-11].) NYSDEC issued the draft SPDES permit in June 1997 for public comment. The final permit is expected to be issued to the WVDP in 2000.

In April 1996 the WVDP obtained storm water characterization data through sampling and analysis and submitted an application for a modification of the SPDES permit to address storm water discharges.

Increasing concentrations of total mercury were observed in 1999 in process water collected in the low-level waste treatment facility. The source of the mercury was determined to be process water from the liquid waste treatment system evaporator. (The evaporator is used to separate liquids from solid residuals generated during processing of high-level radioactive waste.) Negotiations with NYSDEC regarding additional SPDES permit monitoring requirements and limits were initiated in 1999. It is expected that a final SPDES permit that addresses mercury will be issued in 2000.

Wetlands. Jurisdictional wetlands are defined in Clean Water Act Section 404 as those satisfying specific technical criteria related to vegetation, soils, and hydrologic conditions. The WVDP notifies the U.S. Army Corps of Engi-

neers and NYSDEC of proposed actions that could affect wetland units not specifically exempted from regulation or notification.

A wetlands assessment in the summer of 1998 identified and delineated jurisdictional wetlands regulated under the Clean Water Act, Section 404, and/or those wetlands that may be regulated by the state of New York under Article 24 of the Environmental Conservation Law. The 375-acre assessment area covered a portion of the Western New York Nuclear Service Center (WNYNSC), including the entire 220-acre WVDP and adjacent parcels north, south, and east of the WVDP premises. The assessment also supported the requirements of Executive Order 11990, Protection of Wetlands, and updated a 1993 investigation.

Fifty-nine jurisdictional wetlands ranging in size from 0.01 acres to 8.6 acres were identified, a total of approximately 39 acres of wetland. The wetland delineation was conducted in August 1999 and subsequently submitted to the U.S. Army Corps of Engineers for verification of wetland boundaries. Verification was obtained in November 1999.

In August 1999 a 150-ft corridor along both sides of the railroad spur from the southern fenced boundary of the Project premises to the intersection with Fox Valley Road was assessed to identify and delineate jurisdictional wetlands. Twenty-three separate wetland units were identified.

In December 1999 a Joint Application for Permit was submitted to NYSDEC and the U.S. Army Corps of Engineers for activities in or near wetlands associated with the railroad spur. These activities will include improvements to portions of the storm water drainage system and to the culvert that carries the railroad spur over Buttermilk Creek. It is expected that permits

and water quality certifications will be issued for these proposed activities by May 2000.

North Plateau Groundwater Recovery System.

In November 1995 the WVDP installed a groundwater recovery system to mitigate the movement of strontium-90 contamination in the groundwater northeast of the process building. Three recovery wells, installed near the leading edge of the groundwater plume, collect contaminated groundwater from the underlying sand and gravel unit. The groundwater is then treated in the new low-level waste treatment facility (LLW2) using ion-exchange to remove strontium-90. After the groundwater is processed, it is discharged to lagoon 4 or 5, near the LLW2. Approximately 67 million liters (17.8 million gal) of groundwater have been processed through the system since its inception, including about 13 million liters (3.4 million gal) in 1999.

In 1998 the Project began evaluating in-place permeable treatment wall (PTW) technology for treating contaminated groundwater. PTW technology is a passive treatment method, i.e., neither pumps nor a separate water treatment system are used. Rather, contaminants are removed from the groundwater as it flows through a subsurface trench filled with treatment media. Laboratory benchscale tests were initiated in December 1998 to examine this technology for removal of strontium-90 in WVDP groundwater, and a pilot-scale treatment wall was installed in 1999.

Petroleum- and Chemical-Product Spill Reporting. The WVDP has a Spill Notification and Reporting Policy to ensure that all spills (see Glossary) are properly managed, documented, and remediated in accordance with applicable regulations. This policy identifies the departmental responsibilities for spill management and the proper spill-control procedures.

The policy stresses the responsibility of each employee to notify the main plant operations shift supervisor upon discovery of a spill. This first-line reporting requirement helps to ensure that spills are properly evaluated and managed.

Under a 1996 agreement with NYSDEC regarding petroleum spill-reporting protocol, the WVDP is not required to report spills of petroleum products of 5 gallons or less onto an impervious surface that are cleaned up within two hours of discovery. Petroleum-product spills of 5 gallons or less onto the ground are entered in a monthly petroleum spill log, which is submitted to NYSDEC on or by the fifteenth day of the following month.

Spills of any amount that travel to waters of the state must be reported within two hours to the NYSDEC spill hotline and also are entered in the monthly log. Spills of petroleum products that enter navigable waters of New York State are reported to the National Response Center within two hours of discovery. There were no spills to navigable waters at the WVDP in 1999.

The WVDP also reports spills or releases of hazardous substances in accordance with the reporting requirements of RCRA, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) if a reportable quantity has been exceeded, the CAA, EPCRA, the CWA, and the Toxic Substances Control Act (TSCA). No chemical spills or releases exceeded reportable quantities and, thus, no reporting was required. All spills that occurred in 1999 were cleaned up in a timely manner in accordance with the WVDP Spill Notification and Reporting Policy, thereby minimizing any effects on the environment. Debris generated during cleanup was characterized and dispositioned appropriately.

Safe Drinking Water Act (SDWA). The Safe Drinking Water Act (SDWA), as amended, re-

quires that each federal agency having jurisdiction over a federally owned or maintained public water system must comply with all federal, state, and local requirements regarding safe drinking water. Compliance with regulations promulgated under the SDWA in the state of New York is overseen by the New York State Department of Health (NYSDOH) through county health departments.

The WVDP obtains its drinking water from surface water reservoirs on the WNYNSC and is considered a non-transient, noncommunity public water supplier. The WVDP's drinking water treatment facility purifies the water by clarification, filtration, and chlorination before it is distributed on-site.

As an operator of a drinking water supply system, the WVDP routinely collects and analyzes drinking water samples to monitor water quality. The results of these analyses are reported to the Cattaraugus County Health Department, which also independently analyzes a sample of WVDP drinking water every month to determine bacterial and residual chlorine content. Analysis of the microbiological samples collected in 1999 produced satisfactory results and the free chlorine residual measurements taken throughout the distribution system were positive on all occasions, indicating proper disinfection.

The WVDP regularly tests the site's drinking water for lead and copper in accordance with EPA and NYSDOH regulations. NYSDOH regulations allow a facility to reduce sampling from once a year to once every three years if three consecutive sampling campaigns produce results below the action level. Because sampling for lead and copper in 1997, 1998, and 1999 indicated that all results were below the action levels for these metals, the next scheduled sampling for lead and copper will be in 2002.

The Cattaraugus County Health Department conducted its annual inspection of the WVDP water supply system on November 2, 1999. No findings or notices of violation were issued.

Toxic Substances Control Act (TSCA). The Toxic Substances Control Act (TSCA) of 1976 regulates the manufacture, processing, distribution, and use of chemicals, including asbestos-containing materials (ACM) and polychlorinated biphenyls (PCBs). Because PCBs are regulated as a hazardous waste in New York State, the WVDP continued in 1999 to manage radioactively contaminated PCB wastes as radioactive mixed wastes and nonradioactive PCB waste as hazardous waste. Details concerning PCB-contaminated radioactive waste management, including a description of the waste and proposed treatment technologies and schedules, can be found in section 3.1.5 of the Site Treatment Plan, Fiscal Year 1998 Update (West Valley Nuclear Services Co., Inc. February 1999).

To comply with TSCA, all operations associated with PCBs comply with the PCB and PCB-Contaminated Material Management Plan (West Valley Nuclear Services Co., Inc. December 28, 1998). The WVDP also maintains an annual document log that details PCB use and appropriate PCB waste storage on-site and any changes in storage-for-disposal status. The WVDP complies with the regulations for the disposal of PCBs, which conditionally allow radioactive and nonradioactive PCB wastes to be stored for more than one year (40 CFR Parts 750 and 761).

The WVDP Asbestos Management Plan update (West Valley Nuclear Services Co. October 26, 1999) includes results of a review of the asbestos-management program completed by the WVDP Waste Operations department in January 1999.

In 1999 the WVDP also continued to maintain compliance with all TSCA requirements pertaining to asbestos by managing asbestos-containing material (ACM) at the site in accordance with the Asbestos Management Plan. The plan was prepared to ensure compliance with TSCA requirements and includes requirements for limiting worker exposure to ACM and for asbestos-abatement projects, maintenance activities, and periodic surveillance inspections (at least once every three years). The plan also identifies the inventory and status of on-site ACM.

Activities in 1999 included the repair or abatement of damaged/friable ACM, removal of roofing materials containing asbestos, removal of all friable asbestos from the LLWTF, and the maintenance of signs and labels to warn workers of asbestos-containing material. All activities associated with ACM are completed by personnel who are certified by the New York State Department of Labor (NYSDOL). WVNS maintains an asbestos-handling license issued by NYSDOL.

National Environmental Policy Act (NEPA). The National Environmental Policy Act (NEPA) of 1969, as amended, establishes a national policy to ensure that protection of the environment is included in federal planning and decision making (Title I). Its goals are to prevent or eliminate potential damage to the environment that could arise from federal legislative actions or proposed federal projects. The President's Council on Environmental Quality (CEQ), established under subsection II of NEPA, sets the policy for fulfilling these goals. The CEQ regulations for implementing NEPA are promulgated in 40 CFR Parts 1500 - 1508.

NEPA requires that all federal agencies proposing actions having the potential to significantly affect the quality of human health and the environment prepare detailed environmen-

tal statements. The DOE implements NEPA by requiring an environmental review of all proposed actions. The DOE's NEPA procedures are a hierarchical system of assessments for reviewing and documenting proposed actions that is commensurate with the action's potential for affecting the environment.

The levels of review and documentation are: no impact and a categorical exclusion (CX); potential impact and an environmental assessment (EA); and significant impact and an environmental impact statement (EIS). (See the Glossary for definitions of *categorical exclusion*, *environmental assessment*, and *environmental impact statement*.) Several actions at the WVDP were reviewed and approved in 1999 under the DOE's NEPA-implementing regulations:

- In July 1999, under the 1998 Supplement Analysis to the 1982 Final EIS for the WVDP (DOE/EIS-0081), the DOE approved the design and construction of a facility for remotely handling waste. (For a description of this Supplement Analysis see the NEPA section in the Environmental Compliance Summary of the West Valley Demonstration Project Site Environmental Report: Calendar Year 1998.)
- Routine maintenance activities, installation of a hydrogen peroxide addition system for controlling algae growth in the lagoons, and bioventilation of petroleum-contaminated soil were categorically excluded.

Completion of the WVDP and Closure of the WNYNSC. Activities continued in 1999 in support of the Draft Environmental Impact Statement for Completion of the West Valley Demonstration Project and Closure or Long-Term Management of Facilities at the Western New York Nuclear Service Center (DOE/EIS-0226-D). The DOE and NYSERDA continued work associated with developing a preferred alternative.

On February 23, 1999, the Nuclear Regulatory Commission (NRC), as a cooperating agency in the EIS process and as part of its responsibilities under the WVDP Act, issued SECY-99-057 as a supplement to SECY-98-251, Decommissioning Criteria for West Valley. Based on these documents, the NRC Commissioners approved the License Termination Rule (LTR) as the decommissioning criteria for the WVDP in a June 3, 1999 memorandum. On September 2, 1999 SECY-99-232 was issued, informing the Commission of the NRC staff's intent to provide a draft policy statement on the decommissioning criteria for the WVDP and the West Valley site.

The LTR specifies a range of criteria for two decommissioning options: release of the site with no restrictions on its use and release of the site with legally enforceable controls to limit future access and use. Alternate criteria also are available if the licensee provides assurance that the public's health and safety would continue to be protected, employs restrictions on site use and access, reduces doses to as-low-as-reasonably-achievable (ALARA) levels, documents that community advice has been sought and addressed, and submits the decommissioning plan or License Termination Plan to the Commission. The use of this alternate criteria requires Commission approval after consideration of EPA and public comments and NRC staff recommendations. A draft policy statement describing the decision was issued on December 3, 1999.

Nationwide Management of Waste. In May 1997 DOE Headquarters issued the Final Waste Management Programmatic Environmental Impact Statement to evaluate nationwide management and siting alternatives for the treatment, storage, and disposal of five types of radioactive and hazardous waste. The alternatives address waste generated, stored, or bur-

ied over the next twenty years at fifty-four sites in the DOE complex.

The Final Waste Management Programmatic EIS was issued with the intent of developing and issuing separate records of decision for each type of waste analyzed. In 1998 the DOE issued records of decisions for transuranic and non-wastewater hazardous waste. On August 26, 1999 the DOE issued the record of decision for high-level radioactive waste. This decision specifies that the WVDP high-level vitrified waste will remain in storage on-site until it is accepted for disposal at a geologic repository.

On December 10, 1999 the DOE issued its preferred alternative for the management of low-level radioactive waste and mixed low-level waste. Hanford and the Nevada Test Site were identified as the preferred regional disposal sites for these waste types (64 Federal Register 69241). The Federal Register notes that the term "regional" does not impose geographical restrictions on which DOE sites could ship low-level and mixed low-level waste to these disposal sites.

Migratory Bird Treaty Act. The WVDP monitors Project activities to ensure continued compliance with the requirements of both the Migratory Bird Treaty Act and the Endangered Species Act. A New York State Fish and Wildlife License allows the WVDP to remove nests of migratory birds as needed to avoid the potential spread of radioactive contamination or to otherwise protect the health and safety of Project employees and visitors. The WVDP's license (DWP00-001) was received from NYSDEC and is effective from January 1, 2000 through December 31, 2000.

Every two years the WVDP updates its information about the potential for federally listed or proposed endangered or threatened species to

be in the vicinity of Project activities. This was most recently done by letter to the U.S. Fish and Wildlife Service on June 7, 1999. Their reply on June 21, 1999, reconfirmed that "except for occasional transient individuals" no plant or animal species protected under the Endangered Species Act were known to exist at the WVDP.

Current Achievements and Program Highlights

The WVDP's successful high-level waste vitrification program is only one of two such programs operating in the nation.

Phase II Vitrification. Phase II of vitrification, processing the high-level waste residuals (heels) in storage tank 8D-2, continued in 1999. Thirty-five glass canisters were filled during this phase of operation, bringing the total number processed since operations began in 1996 to 245 canisters.

A high-pressure water spray lance was designed, tested, and installed in high-level waste tank 8D-1 to mobilize the material that has settled into the grid structure at the bottom of the tank. The mechanical arm that deploys the spray lance is equipped with a camera and light system to allow visual observation of the inside of the tank. A similar spray lance and camera system is being fabricated for use in high-level waste tank 8D-2 to remove settled material in that tank. Additional waste-retrieval equipment that will increase the tools available for further cleanout of the tanks has been designed and is being fabricated and tested.

Integrated Safety Management System (ISMS). In August 1999 a self-assessment was conducted to verify that the WVDP's integrated environmental, safety, and health management system continued to function in accordance with the 1998 plan.

- The WVDP's ISMS had been verified by the DOE Ohio Field Office in November 1998. The Criteria Review and Approach Documents that resulted from the DOE verification review were re-evaluated during the 1999 self-assessment to identify areas for improvement and/or additional consideration. Based on this re-evaluation, the system configuration was revised to include policies and procedures for the site-wide work review group, the environmental management system (EMS), and other WVDP programs related to work planning and worker safety.

- Similarly, based on the Criteria Review and Approach Documents, the EMS was revised to describe its relationship to the ISMS, to clarify EMS deliverables, and to add the EMS to the set of binding documents describing activities at the WVDP that allow safe operation of the facility.

The WVDP has demonstrated its commitment to an all-inclusive approach to safety through its safety programs and implementation, in which employees are encouraged and empowered to take ownership of safety in their jobs.

The DOE Voluntary Protection Program (VPP) STAR Status Program was developed by the department of Occupational Safety and Health (OSHA) and adopted by the DOE to recognize superior health and safety performance by contractor management and employees.

In 1999 the WVDP was recommended for STAR Status, the highest safety award given within OSHA or the DOE. This prestigious award has been granted to only five other DOE sites.

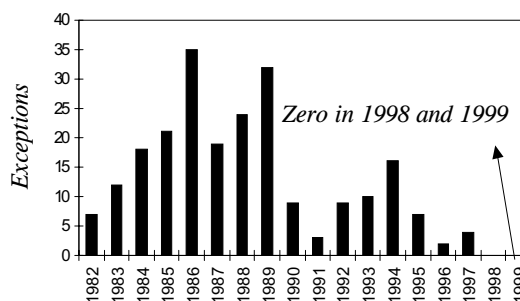
Environmental Management System (EMS). WVNS's environmental management system comprises procedures that provide the basic policy and direction for accomplishing work through proactive management, environmen-

tal stewardship, and the integration of appropriate technologies across all Project functions. Environmental management is integrated with other safety management and work planning processes at the WVDP through the integrated environmental, health, and safety management program (ISMS).

The WVNS EMS satisfies the requirements of both the Code of Environmental Management Principles (CEMP) for federal agencies and ISO (International Organization for Standardization) 14001, Environmental Management Systems: Specifications for Guidance and Use, which are the two major frameworks for environmental management systems. The CEMP was developed by the EPA in response to Executive Order 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements. It embodies the principles and underlying performance objectives that are the basis for responsible environmental management. ISO 14001 is a comparable environmental management system that is being implemented throughout the world.

Clean Water Act. As shown in the chart below, the annual number of exceptions to the discharge concentration limits specified in the site's SPDES permit have been substantially re-

**WVDP SPDES Permit Limit Exceptions
1982-1999**



duced, especially when compared to the peak of thirty-five exceptions noted in 1986. In 1999, for the second consecutive year, no exceptions were reported.

Storm Water Discharge Permit. Surface water runoff from precipitation can become contaminated with pollutants from industrial process facilities, material storage and handling areas, access roads, or vehicle parking areas. To protect the environment, aquatic resources, and public health, Section 402(p) of the CWA requires that a storm water discharge permit application containing facility-specific information be submitted to the permitting authority. NYSDEC, the permitting authority in New York State, uses this information to ascertain the potential for pollution from storm water collection and discharge systems and to determine appropriate permitting requirements. The WVDP is expecting a SPDES permit modification in 2000 that addresses the site's storm water runoff.

Flood Protection: Water-Supply Dam Repairs. In 1998 an inspection by NYSDEC of the site's two water-supply reservoir dams and the emergency spillway showed that an area around dam #1 had slumped and that repairs were needed. NYSDEC concurred with the WVDP's repair plans and confirmed that these actions constituted routine maintenance. All repairs — relocation of a section of the roadway, removal of associated piers and rock baskets, diversion of the road underdrain, installation of silt fencing, and reseedling — are scheduled for completion by September 2000.

Closed Landfill Maintenance. Closure of the on-site nonradioactive construction and demolition debris landfill (CDDL) was completed in August 1986. The landfill area was closed in accordance with NYSDEC requirements for this type of landfill, following a closure plan

(Standish 1985) approved by NYSDEC. To meet routine post-closure requirements, the CDDL cover was inspected twice in 1999 and found to be in generally good condition. The grass cover on the clay and soil cap is routinely maintained and cut, and drainage is maintained to ensure that no obvious ponding or soil erosion occurs.

Release of Materials Containing Residual Radioactivity. The release of property containing residual radioactivity from DOE facilities is carefully controlled by DOE guidelines and procedures. Any transfer that places property (real property, structures, or equipment) containing radioactivity into public use is classified as a type of environmental release.

In keeping with DOE initiatives to expand environmental information provided to the public, certain details of transfers of property containing residual radioactivity are to be included in annual site environmental reports. The information provided should include the type of material and the amount of residual radioactivity, the basis for releasing the property for public use (including release limits and when the property was released), the end use and cost savings associated with release of the property, and doses to individuals and the collective dose to the public associated with each release. The WVDP did not release any property classified per DOE Order 5400.5 as material containing residual radioactive material in 1999.

Project Assessment Activities in 1999

As the primary contractor for the DOE at the WVDP, WVNS maintains a comprehensive review program for proposed and ongoing operations. Assessments are conducted through formal surveillances and informal programs. Formal surveillances ensure compliance with regulations, directives, and DOE Orders.

The informal program is used to identify issues or potential problems that can be corrected on the spot.

The local DOE Project office also independently reviews various aspects of the environmental and waste management programs, and in 1999 overall results of the reviews reflected continuing, well-managed environmental programs at the WVDP.

Significant external environmental overview activities in 1999 included inspections by NYSDEC for compliance with RCRA, SPDES, and chemical bulk storage tanks requirements and an annual compliance inspection of the WVDP potable water supply system by the Cattaraugus County Health Department. These inspections did not identify any environmental program findings and further demonstrated the WVDP's commitment to protection of the environment.

Hardware and software used in the environmental monitoring program were assessed for year-2000 compliance. Included in the assessment were the meteorological system, water samplers, air samplers, radiological counting instruments, emergency response equipment, laboratory and field equipment and instruments, and data management and reporting systems. All corrective actions identified in the assessment were completed by September 1999. No problems in the WVDP environmental program as a result of the millennium date change were noted.